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Registered Trade Mark Attorneys

10/532644  
Rec'd PCT/PTO 25 APR 2005  
4220 Nash Court  
Oxford Business Park South  
Oxford OX4 2RU

Established 1887

Tel: +44 (0)1865 397900  
Fax: +44 (0)1865 397919  
E-mail: oxford@marks-clerk.com  
http://www.marks-clerk.com

Rebecca Tanis  
WesternGeco Intellectual Property Dept  
PO Box 2469  
Houston  
TX 77252-2469  
USA

your ref 14.0225-PCT  
our ref AMS.P52428WO  
date 3 June 2004

RECEIVED

JUN 16 2004

ms/06116104

IPW

Dear Rebecca

**PCT Application PCT/EP 03/50872**  
**WesternGeco Seismic Holdings et al**  
**"Seismic Acquisition System"**

## Search Report

The EPO has now issued the International Search Report on the above application, and a copy is enclosed. Copies of the six documents cited by the Examiner are also enclosed.

The first two documents have been cited in "Category Y" against claims 1-44. This indicates that the Search Examiner considers that they can be combined to attack the inventive step of claims 1-44.

The remaining four documents have been cited only in "Category A" as indicating the technological background to the invention. This indicates that the Search Examiner considers that they are not of particular relevance to the invention as currently claimed.

## Further Prosecution

I have filed a Demand for International Preliminary Examination of this application, in accordance with your e-mail instructions of 3 May 2004. A copy of the Demand is enclosed for your file.

The 30-month deadline for entry into the National phase will be 22 May 2005 (at the earliest).

**Partners**  
E W B Lyndon-Stancic MA CPA EPA  
C J R Gibson CPA EPA  
D Carpenter LLB CPA EPA  
K Whalley BSc MTMA CPA EPA  
P J Altmann BSc MTMA CPA EPA  
B Spoor BSc CPA EPA  
M R Higgins BSc MSc CEng MEE MSAE MNIIE CPA EPA  
D G Tubby BSc CPA EPA  
E J Godwin MA CPA EPA  
A J Ablewhite BSc(Chem) ARCS CPA EPA  
G K Ruffles BA BSc MSc EurChem FRSC CChem CPA EPA  
J S Robinson MA CPA EPA  
J A Slater FRMA CPA EPA

A H W Luckhurst MSc MTMA CPA EPA  
A V Hallam BEng CEng MEE CPA MTMA EPA  
S P Hosford FRMA  
R P Harding MA CPA EPA  
S J Hackett BSc(Phys) ARCS CPA EPA  
C T Graham LLB MTMA  
P B Atkinson BSc CChem MRSC CPA EPA  
H D Lord MA CPA EPA  
R P Maury MA CEng MSc MTMA CPA EPA  
B J Morgan MTMA  
K L Hodgkinson MPhil BA(Sci) MTMA CPA EPA  
E D M Rowley FRMA  
S G Mosey BSc CPA EPA  
S J Mountney BSc CEng MSc CPA EPA  
T S Andrews MA PhD CPA EPA

J P Asquith MA FRSA NZPA CPA EPA  
H C Fisher MTMA  
D A Evely BEng MTMA CPA EPA  
M P Holmes BSc CPA EPA  
A V Clarke MA MTMA  
J Kay LLB MTMA  
M J Lamb MA FRMA CPA EPA  
R L Tew BSc MSc MTMA  
P J Withers BA MTMA  
I H Coates BSc(Chem) ARCS FRD DIC  
MTMA CPA EPA  
A M Suckling MA CPA MTMA RPA EPA  
P A Bailey BSc CPA EPA  
D C Slagg BSc MPhil DIC CPA MTMA EPA  
J D Collins BSc PhD CEng MSc  
MTMA CPA EPA

S Loeffler BSc(Eng) DPhil MTMA  
P A Mellor BA MTMA  
R Lind BEng PhD CPA EPA  
J L Madgley MA A EL CPA EPA  
R J Granleese MA PhD CPA EPA  
P C Barford BSc PhD CPA EPA  
M P Shaw LLB MTMA  
D I Ward BSc MSc PhD CPA EPA  
P J Martin BA PhD CEng CPA EPA  
J A Moffat BSc CPA EPA MTMA  
S J Church BEng CPA EPA  
J Barrett-Major BSc CPA EPA

**Consultant**  
M H Blair LLB

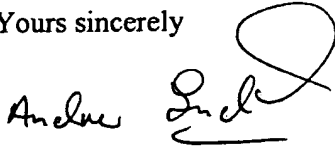
**Associates**  
A C Fairbairn MA CPA EPA  
K P Halligan MTMA  
V I Caddy MA MTMA  
C L Mountney BA MTMA  
D Talbot-Ponsbury MA CPA EPA  
G D Smyth MA PhD MRSC CChem CPA EPA  
P Moran BEng MSc RPA  
K A Oliver LLB MTMA  
G A Chisholm BE(Eng) BA(PhD) CPA EPA NZPA  
G A Duncan MSc MRSC RPA  
R J G O'Leary MA MSc RPA EPA  
M P Hagmann-Smith BSc(Eng) PhD Phys EPA  
M J Aige BSc FRACP  
P Melcor MA Solicitor  
S M McCausland BEng(Eng) MSc FRSA NZPA  
R Ballester Abogado

It is now possible to file amendments to the claims of this application, and the normal deadline for filing amendments is two months from the date of the search report – that is, by 11 July 2004. I presume that you intend to wait until the first written opinion is issued before making any amendments, but please let me know if you would like to make any amendments at this time.

The next action on this application should be for the EPO to issue the first written opinion, and I shall let you know once I receive this.

Our debit note is being sent to WesternGeco AS.

Yours sincerely

A handwritten signature in black ink, appearing to read "Andrew Suckling". The signature is written in a cursive style with a large, looping flourish at the end.

**Dr Andrew Suckling**

# PATENT COOPERATION TREATY

SR: 11/08/04

R

From the INTERNATIONAL SEARCHING AUTHORITY

## PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT  
OR THE DECLARATION

(PCT Rule 44.1)

To:

MARKS & CLERK  
Attn. Suckling, Andrew  
4220 Nash Court  
Oxford Business Park South  
Oxford, Oxfordshire OX4 2RU  
UNITED KINGDOM

Date of mailing  
(day/month/year)

11/05/2004

Applicant's or agent's file reference

AMS . P52428WO

**FOR FURTHER ACTION**

See paragraphs 1 and 4 below

International application No.

PCT/EP 03/50872

International filing date  
(day/month/year)

21/11/2003

Applicant

WESTERNGECO SEISMIC HOLDINGS LIMITED

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Fascimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority

 European Patent Office, P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Gregory Adam

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

#### What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

#### When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

#### How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

#### What documents must/may accompany the amendments?

##### Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

## NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### "Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international application is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

### Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|  |   |  |
|--|---|--|
| Applicant's or agent's file reference<br><b>AMS . P52428WO</b> | <b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. |  |
| International application No.<br><b>PCT/EP 03/50872</b>        | International filing date (day/month/year)<br><b>21/11/2003</b>   | (Earliest) Priority Date (day/month/year)<br><b>22/11/2002</b> |
| Applicant<br><b>WESTERNGECO SEISMIC HOLDINGS LIMITED</b>       |   |  |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

## 4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**SEISMIC DATA ACQUISITION SYSTEM AND METHOD OF ACQUIRING SEISMIC DATA USING  
DEFINED CELLS AND INDEPENDENT PATHWAYS**

## 5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

## 6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/50872

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G01V1/22

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G01V

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| Y          | US 6 219 620 B1 (PARK WILLIAM PENTLAND ET AL) 17 April 2001 (2001-04-17)<br>the whole document                            | 1-44                  |
| Y          | US 6 226 601 B1 (LONGAKER HAROLD L) 1 May 2001 (2001-05-01)<br>column 6, line 53 - line 55<br>column 7, line 40 - line 49 | 1-44                  |
| A          | US 2001/039478 A1 (BARY RENATE ET AL) 8 November 2001 (2001-11-08)<br>the whole document                                  | 1-44                  |
|            | ---<br>-/--   |                       |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

28 April 2004

Date of mailing of the international search report

11.05.04

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

PIA EKLUND/MN

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/50872

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |  |                       |
|--|--|-----------------------|
| Category *   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
| A  | PATENT ABSTRACTS OF JAPAN<br>vol. 1998, no. 06,<br>30 April 1998 (1998-04-30)<br>& JP 10 031075 A (SEKIYU KODAN),<br>3 February 1998 (1998-02-03)<br>abstract<br>--- | 1-44                  |
| A  | EP 0 978 733 A (INPUT OUTPUT INC)<br>9 February 2000 (2000-02-09)<br>the whole document<br>---   | 1-44                  |
| A  | US 6 424 931 B1 (HAIDE JANOS ET AL)<br>23 July 2002 (2002-07-23)<br>the whole document<br>-----  | 1-44                  |



## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/50872

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date      |
|---|---------------------|----------------------------|--------------------------|
| US 6219620                                | B1                  | 17-04-2001                 | AU 4716797 A 15-05-1998  |
|   |                     | CA 2268939 A1 30-04-1998   |                          |
|   |                     | CN 1234121 A 03-11-1999    |                          |
|   |                     | DE 69724445 D1 02-10-2003  |                          |
|   |                     | EP 0934538 A1 11-08-1999   |                          |
|   |                     | WO 9818022 A1 30-04-1998   |                          |
|   |                     | JP 2001502429 T 20-02-2001 |                          |
|   |                     | RU 2190241 C2 27-09-2002   |                          |
| US 6226601                                | B1                  | 01-05-2001                 | CA 2332136 A1 25-11-1999 |
|   |                     | EP 1080380 A1 07-03-2001   |                          |
|   |                     | WO 9960424 A1 25-11-1999   |                          |
| US 2001039478                             | A1                  | 08-11-2001                 | FR 2808335 A1 02-11-2001 |
|   |                     | CA 2345870 A1 28-10-2001   |                          |
|   |                     | EP 1150138 A1 31-10-2001   |                          |
|   |                     | NO 20012016 A 29-10-2001   |                          |
| JP 10031075                               | A                   | 03-02-1998                 | JP 2949074 B2 13-09-1999 |
| EP 0978733                                | A                   | 09-02-2000                 | CA 2279694 A1 07-02-2000 |
|   |                     | EP 0978733 A2 09-02-2000   |                          |
|   |                     | JP 2000098045 A 07-04-2000 |                          |
|   |                     | NO 993814 A 08-02-2000     |                          |
| US 6424931                                | B1                  | 23-07-2002                 | CA 2277635 A1 07-02-2000 |
|   |                     | EP 0978732 A2 09-02-2000   |                          |
|   |                     | JP 2000131451 A 12-05-2000 |                          |
|   |                     | NO 993813 A 08-02-2000     |                          |
|   |                     | US 6041283 A 21-03-2000    |                          |